Computer modeling helps us learn to live with wildland fires

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by Rodman Linn

Wildland fires play an important role in many ecosystems, yet in the western United States land managers have spent a century excluding it from the landscape. The resulting overgrown forests, along with hot and dry conditions, have changed the nature of fires when they do happen, making them more intense and more destructive. Figuring how best to respond is important for the health of our forests, the safety of nearby communities, and the well-being of firefighters on the job—and it's a task that can now draw on some of the most powerful computers in the world.

With the US Forest Service, the Lab is using a tool called FIRETEC to simulate the fire/atmosphere interaction that controls fire behavior, from low-intensity fires under marginal conditions to catastrophic wildfires—two extremes where our ability to predict fire behavior is least developed. This includes addressing key questions about both prescribed fire tactics and the fundamentals of fire behavior responses to terrain, fuels, and wind conditions.

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